

AMENDMENTS TO THE CLAIMS

Upon entry of this amendment, the following listing of claims will replace all prior versions and listings of claims in the pending application.

IN THE CLAIMS

Please amend claims 17 and 19 as follows:

1. (Previously presented) A method of block diagram modeling in a data processing system, comprising:
 - in a first block, receiving a first value indicative of an index into a lookup table;
 - in the first block, generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions;
 - in a second block, receiving the information generated by the first block; and
 - using the information received in the second block to determine an output value of a first lookup table.
2. (Previously presented) The method of claim 1, wherein the generated information comprises information identifying a region of the predefined domain within which the first value falls.
3. (Previously presented) The method of claim 2, wherein the generated information further comprises information identifying a position of the first value within the identified segment.
4. (Previously presented) The method of claim 1, further comprising:
 - in a third block different from the second block, receiving the information generated by the first block; and
 - using the information received in the third block to determine an output value of a second lookup table different from the first lookup table.
5. (Previously presented) The method of claim 1, further comprising:
 - in a fourth block, receiving a second value indicative of an index into a lookup

table;

in the fourth block, generating information indicative of the location of the second value relative to a predefined domain of possible index values;

in the second block, receiving the information generated by the fourth block; and using the information received in the second block from the first block and the fourth block to determine an output value of the first lookup table.

6. (Previously presented) The method of claim 1, wherein the first and fourth blocks are two of N index search blocks used to perform an N-dimensional interpolation, further comprising:

in each of the N index search blocks, receiving a value indicative of an index into the lookup table and corresponding to a different one of N dimensions;

in each of the N index search blocks, generating information indicative of the location of such value relative to the predefined domain of possible index values; and

in the second block, receiving the information generated by each of the N index search blocks; and

using the information received in the second block to determine an output value of the first lookup table.

7. (Previously presented) The method of claim 1, wherein determining an output value of the first lookup table comprises using the information received in the second block to interpolate values in a lookup table.

8. (Previously presented) The method of claim 1, further comprising:

maintaining in a block library a pre-lookup index search block and an interpolation block that uses output of the pre-lookup index search block for interpolated table lookup; and

instantiating the index search block to create the first block and instantiating the interpolation block to create the second block.

9. (Previously presented) The method of claim 8, further comprising:
receiving parameters from a user to instantiate the pre-lookup index search block and
the interpolation block.
10. (Previously presented) The method of claim 9, wherein receiving comprises providing the
user with a dialog box having fields for specifying values of the parameters for the pre-lookup
index search block.
11. (Previously presented) The method of claim 9, wherein receiving comprises providing the
user with a textual API for programmatically specifying values of the parameters.
12. (Previously presented) The method of claim 10, wherein the parameters for the pre-
lookup index search block comprise breakpoint data.
13. (Previously presented) The method of claim 9, wherein receiving comprises providing the
user with a dialog box having fields for specifying values of the parameters for the interpolation
block.
14. (Previously presented) The method of claim 13, wherein the parameters for the
interpolation block comprise table data.
15. (Previously presented) The method of claim 6, wherein the generated information
comprises a breakpoint data set index value and a distance fraction value for each dimension and
corresponding input value chosen by the user.
16. (Previously presented) The method of claim 1, comprising:
using the graphical block diagram of the graphical block diagram model as a
specification for interpretation by automatic code generation software that generates code to
perform computations equivalent to computations performed by the graphical block diagram
model.

17. (Currently Amended) In one or more electronic devices, A method of graphical block diagram processing, comprising:

receiving as an input a block diagram model that includes interpolation lookup blocks which each perform ~~index search operations and~~ interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block;

detecting if the interpolation lookup blocks have shared input values and breakpoint data sets; and

interpreting the block diagram model as if the block diagram model included separate index search blocks for each of the and interpolated lookup blocks.

18. (Previously presented) The method of claim 17, further comprising using the interpreted graphical block diagram by automatic code generation software that generates code to perform computations equivalent to computations performed by the graphical block diagram model.

19. (Currently Amended) In one or more electronic devices, a method of graphical block diagram processing, comprising:

maintaining in a block library ~~an index search block and~~ an interpolation block that uses output of one or more pre-lookup index search blocks; and

enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical block diagram model.

20. (Previously presented) A computer program product residing on a computer-readable medium for block diagram modeling, the computer program product comprising instructions causing a computer to:

in a first block, receive a first value indicative of an index into a lookup table;

in the first block, generate information indicative of the location of the first value relative to a predefined domain of possible indexed values;

in a second block, receive the information generated by the first block; and
use the information received in the second block to determine an output value of a
first lookup table.

21. (Previously presented) A computer system comprising:
- in a first block, means for receiving a first value indicative of an index into a lookup table;
 - in the first block, means for generating information indicative of the location of the first value relative to a predefined domain of possible indexed values;
 - in a second block, means for receiving the information generated by the first block; and
 - means for using the information received in the second block to determine an output value of a first lookup table.